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## Panel T09P12 - Session 1

Challenges for Multilevel Governance: Civil Society and Institutional Conditions for Effective Inclusion in Latin America and Europe

## **Measures of participation:**

the existence and the activity levels of rights councils as determinants of municipal policies for people with disabilities in Brazil

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#### Abstract

A landmark in its democratization process, Brazil's promulgation of a rightscentered Constitution in 1988 led to a proliferation of local and federal participative institutions, ending a 20th Century in which the Brazilian State was relatively impermeable to public engagement. Unlike its predecessors, the new Constitution includes in its present form twelve explicit provisions for participative practices, understood as deliberative mechanisms that incorporate citizens and civil organizations into the process of governmental decisionmaking. As has been amply discussed, this groundwork led to a proliferation of public policy and human rights councils among Brazil's 5.570 municipalities.

But are these councils effective in promoting the rights of vulnerable groups at a local level? Applying techniques of regression analysis, the paper seeks to breach the matter by investigating the relation between Councils for the Rights of Disabled Persons and a pool of municipal policies for this social segment. Results suggest that the constitution of these councils and their levels of activity are significant predictive variables for the existence of local public policies promoting the rights of people with disabilities at a local level.

The paper begins with a brief review of the available bibliography on participatory institutions, a review focused on the as of yet incipient debate regarding their effectiveness as instruments for policy design and governance.

Using data from the 2014 Profile Survey of Basic Municipal Information (MUNIC), an annual declaratory census of local government realized by the Brazilian Institute of Geography and Statistics, the paper then presents a

Municipal Index of Programs and Policies for People with Disabilities. A synthetic indicator, this index condenses ten variables as a proxy for the commitment of local governments to promoting the rights of this social segment.

Using linear regression techniques, the paper than measures the relation between numerous independent variables and the variance in the index across municipalities. These include geographic region (fundamental given Brazil's regional inequalities), per capita income, average age, schooling levels and disabled population – besides information regarding the existence and the level of activity of Municipal Councils for the Rights of Persons with Disabilities (MCRPDs).

Among other results, the paper includes findings suggesting that the existence of specific policies for people with disabilities is correlated with statistical significance to the existence of these councils – but, surprisingly, not to the actual proportion of this segment in municipal populations. In other words, mechanisms of citizen participation and participatory governance appear to be a key factor for the effectiveness of inclusive policies for this social segment

#### Keywords

Human Rights ; Disability Studies ; Federalism ; Public Policy ; Indicators.

#### Presentation

Among other changes, the promulgation of a new Constitution in 1988 fostered the dissemination of participative political practices in Brazil, ending a 20<sup>th</sup> Century in which the country's governmental institutions were characterized by bureaucratic insulation and an exclusion of the population from decision-making processes (AVRITZER, 2007 e 2011). Despite not explicating political participation among the five core principles guiding public administration (Legality, Impersonality, Morality, Publicity and Eficiency), the new Constitution includes numerous provisions for this type of practice – understood as State mechanisms to "incorporate citizens and civil society organization in the process of deliberation regarding policies" (AVRITZER, 2008, 45).

Twelve different constitutional articles include explicit provisions for participative deliberation. In its current wording, the Brazilian Constitution requires this mechanism in decisions taken by the steering councils of public institutions (articles 10 and 39), as well as deliberations on agrarian policy (article 187); Social Security (194); Healthcare (198); Culture (216-A. X) and efforts to face and eradicate poverty (articles 79 and 82). It establishes that the Order of Brazilian Lawyers, a civil organization akin to a bar association, must participate in all civil service selections for the Magistracy, for the Public Federal Ministry, and for State and District Prosecutor's Offices (articles 93, 129 and 132).

Beginning in the 1990s, these provisions were strengthened by infraconstitutional instruments which created incentives for states and municipalities to constitute Participative Institutions (henceforth, IPs) as mechanisms of social control, leading to their proliferation both within the Federal Government and Soares and Galvão, 4 among local governments. As CORTES (2011) highlights, this dissemination was particularly acute in policy fields where the receipt of federal resources was conditioned to the constitution – by states and municipalities – of policy or rights councils in charge of conducting social control and oversight over decentralized spending.

Data from the 2014 Profile Survey of Brazilian Municipalities (MUNIC), a declaratory census of 5,570 municipal governments carried out by the Brazilian Institute of Geography and Statistics (IBGE), demonstrates that the approval of organic laws for Healthcare, Social Services and Education was always followed by surges in the constitution of related municipal councils. In the four years which followed the 1990 institution of Law nº 8.080, which grants councils control over the local application of funds within Brazil's Single Health System (SUS), 2,477 Municipal Health Councils were created, compared to 39 in the four years which preceded it. Likewise, 3,332 municipal Social Services Councils were created in the quadrennium which followed the approval of law nº 8,742/1993, which conditioned the receipt of federal resources to the constitution and proper functioning of these councils, against 18 in the preceding quadrennium. Finally, 1,664 municipal Education Councils were created from 1997 to 2000, following the institution of Brazil's Law nº 9.394/1996, which established the Directives and Bases of National Education (LDB), in contrast to 297 from 1992 to 1995.

A similar, if more discrete, pattern occurred with human rights councils in charge of promoting the needs of specific vulnerable populations. In the four years following the approval of Law n<sup>o</sup> 8.069/1990, which instated the country's Statute for Children and Adolescents and established that municipal councils would oversee the application municipal funds for this segment, 1,017 councils for the rights of this segment were created, compared to eight in the preceding four. Likewise, the institution of the Statute of the Elderly Person by Law n<sup>o</sup> 10.741, in 2003, led to the creation of 1,085 councils, compared to 363 in the preceding four-year period.

Curiously, however, Brazil's 2009 promulgation of the United Nations' Convention on the Rights of Persons with Disabilities and its Optional Protocol did not lead to a similar wave of council constitution. Though the instrument was incorporated into Brazilian legal framework with constitutional status, its international nature did not include any reference to federative or multilevel governance. As a result, the convention did not influence the constitution of Municipal Councils for the Rights of Persons with Disabilities (henceforth MCRPDs): only 358 were created in the quadrennium following its year of aproval, compared to 337 in the preceding one.

Besides demonstrating that financial incentives foster council creation, this specificity of MCRPDs makes them a privileged instrument to measure the impact which the political competences and social capital which accompany council creation influence policy implementation: since their existence and constitution is not causally correlated to any increase in the availability of financial resources, the probability of endogeneity by simultaneity is reduced.

**Table 1**, below, uses data from MUNIC 2013 and MUNIC 2014 to measure the presence of policy and rights councils in Brazil's 5,570 municipalities. Since they have greater administrative capacity, larger municipalities have more councils, reason for which the percentage of people living in municipalities which have these participative institutions tends to be significantly larger than the percentage of municipalities that have them.

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In 2014, more than 99% of Brazilians resided in municipalities which had constituted councils for Social Services Policy, Health Policy, and the Rights of Children and Adolescents, while more than 95% resided in municipalities with an Educational Policy council and more than half resides in municipalities with councils for the Rights of Elderly People the Rights of People with Disabilities.

# Table 1: Number and population of municipalities with specific policy andrights councils, by field (2013 and 2014)

Council	Municipalities		Population		
	Number	(%)	Thousands (	%)	
Social Services Policy*	5.562	99,86	202.711	99,96	
Health Policy	5.556	99,75	202.575	99,89	
Rights of Children and Adolescents	5.481	98,40	201.125	99,17	
Education Policy	4.874	87,50	193.435	95,38	
Rights of the Elderly	3.450	61,94	174.099	85,85	
Rights of People with Disabilities	1.093	19,62	129.634	63,92	
Public Safety Policy	691	12,41	63.752	31,44	
LBGT Rights	21	0,38	26.434	13,03	

Source: MUNIC 2013 and 2014. IBGE 2014 and 2015.

\* - Data for 2013, being the rest for 2014.

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As AVRITZER (2011) highlights, this proliferation led to an extensive bibliography on participative institutions comprised of both Brazilian and international authors. Impossible to surmise here, this bibliography is marked by a plurality of approaches – which range from empirical descriptions (such as, per example, SILVA and ABREU 2002), to the interpretation of participative models in the light of the classical theories of political science (AVRITZER 2007), passing by the analysis of how institutional factors such as design and environment influence the deliberative process (PIRES 2011).

This extensive corpus, however, harbors an absence: relatively few quantitative studies have sought to measure to what extent the existence and consolidation of participative institutions affect public policies. On this matter, the pioneering work of AVRITZER and NAVARRO (2003) must be mentioned, as it demonstrated that participatory budgeting, where local governments consult and empower citizens to propose, evaluate, discuss and prioritize government projects, influences how resources are spent. BOULDING and WAMPLER (2010), for their part, associated participatory budgeting to the reductions in extreme poverty and increased social spending. Finally, DONAGHY (2013) demonstrated that the constitution of housing councils increases the probability that municipalities will execute policies in the field.

Despite the insights and the knowledge generated by these studies, however, we still do not know whether – and to what extent – the existence and the degree of institutional consolidation of municipal councils influence public policy at a local level. This is a significant shortcoming, especially given the dissemination of these institutions: as AVRITZER (2007, 150) estimated, even a decade ago Brazil already had about 1,5 million municipal policy councilors, or

25 for each alderman, which formed multiple and often competing policy and rights networks.

Among the various types of participative institutions, municipal councils present themselves as privileged objects of investigation for two reasons. On the one hand, they tend to be formed by specialists in, or at least activists committed to, their respective fields (CORTES, 2011), a homogeneity and qualification which would in theory strengthen the informal and often intangible bonds of trust which PUTNAM (1995) considers fundamental to effective community. Councils are also institutionalized, forming an integral and continuous part of municipal administrations (BARRETO, 2011), a characteristic which would make them more adaptive to bureaucratic structures: unlike classical forms of participation, in which representatives of civil society remained outside the structure which the seek to influence, councils "transform formal governance institutions" (FUNG and WRIGHT, 2001, 23), in a dynamic of *Empowered Participatory Governance*.

Understanding this form of governance is also fundamental given the importance that municipal governments have in Brazilian social and economic development. Ending a two-decade military dictatorship, Brazil's 1988 Constitution sought to promote an unprecedented level of administrative decentralization, reserving for municipalities a strategic role in the implementation of public policy and granting them the same constitutional status as that given to States, to the Federal District and to the Union. But this new design, in which no legal hierarchy was established between the three levels of government, was incapable of eliminating the political, economic and administrative dependence of municipalities (ABRÚCIO, 2005, 46), which were forced to assume tasks and exercise powers which exceeded their "administrative and technical rearguard"

(LASSANCE, 2012, 29). To this day, the limited capacities of these federative units are a prevalent bottleneck in Brazilian development.

Considering the importance of councils as governance mechanisms and of municipalities as strategic, if imperfect, agents of development it becomes – in short – fundamental to better understand the potential and limitation of councils as local governance institutions. This paper seeks to contribute to this goal, which will be done through the analysis of data regarding municipal policies and Councils for the Rights of Persons with Disabilities collected by the 2014 MUNIC – a source of information whose potential to investigate local participative governance, though highlighted by various authors (BARRETO, 2011), remains relatively unexplored.

#### The Index of Programs and Actions for People with Disabilities (IPA-PwD)

Does the constitution and the degree of institutional consolidation of Municipal Councils for the Rights of Persons with Disabilities affect the existence of social policies for this segment? To answer the question, we must first establish an instrument capable of producing an objective measure, with municipal granularity, of policies seeking to promote the rights of this group.

The task is complex. On the one hand, classical coverage indicators would be little reliable given the semantic heterogeneity<sup>1</sup> which marks the tag "disabled" in

<sup>&</sup>lt;sup>1</sup> By semantic heterogeneity, we refer to the lack of consistency and universality, among databases, on the definition or understanding regarding the determinant characteristics of a given variable. In this regard, we use the term in the meaning given to it by Colomb (2007), who uses the expression in reference to "differences in representation among systems" (21).

databases maintained by the Brazilian State, whose sectorial agencies and departments define disability in different and often incompatible forms. On the other, even if these databases were semantically homogenous, there is no annual estimate of the number of disabled residents per location, which would be necessary to define the universe of potential beneficiaries required to calculate the coverage rates of specific policies.

For this reason, this study will attempt to measure social policies for people with disabilities by means of structural indicators<sup>2</sup> focusing on the programs, laws and policies that municipalities create specifically for this public. Unlike result and process indicators, structural indicators measure not the impact that policies have on the population or even the inputs, materials and supplies used by state agents, but the "ratification and adoption of legal instruments and the existence as well as the creation of basic institutional mechanisms deemed necessary for the promotion and protection of human rights" (OHCHR, 2012, 34).

The result was the Index of Programs and Actions for People with Disabilities (IPA-PwD). Comprised of 15 variables on public policies for this segment collected by the Human Rights Section of the 2014 MUNIC, the index includes questions related to the accessibility of schools and information portals; public transportation; the reservation of parking spaces; the proper signalization of common areas; efforts to promote leisure activities; income generation and Healthcare for people with disabilities.

 $<sup>^2</sup>$  We use the term "structural indicators" in the sense given to it by the OHCHR, according to which these are indicators that "reflect the ratification and adoption of legal instruments and the existence as well as the creation of basic institutional mechanisms deemed necessary for the promotion and protection of human rights (2012, 34)".

The IPA-PwD, however, uses less than one third of the 47 variables included in the 2014 MUNIC related to policies for people with disabilities. As ours is a static, non-longitudinal<sup>3</sup> analytic model, for example, all variables regarding the specific year in which a given law was approved or a given policy was implemented were excluded. Other reasons which led to the suppression of variables were cases where variance could be determined by exogenous causes, such as federal policies; where it was impossible to distinguish if the lack a given feature or policy derived from negligence of lack of necessity<sup>4</sup>, where wording was vague and could result in unreliable data; and where the feature measured could be redundant with others included in the index. For a detailed description of omitted variables, see SOARES and GALVÃO (2017, 7-8).

Excluded vague, endogenous, redundant and impertinent variables, the IPA-PwD was calculated establishing the percentage of laws, actions and programs that each municipality implemented from this basic set of 15 possible initiatives. No municipality achieved a maximum score of 100%, but three scored 93.3%: Bauru (PE), Chapecó (SC), and Petrolândia (SC). The average score was 35%.

<sup>&</sup>lt;sup>3</sup> By static, we understand comparissons in which the counterfactual is constituted by simultaneous observations of objects similar or identical in all regards except a given characteristic approached as an independent variable (ALMEIDA, 2011, 325-326).

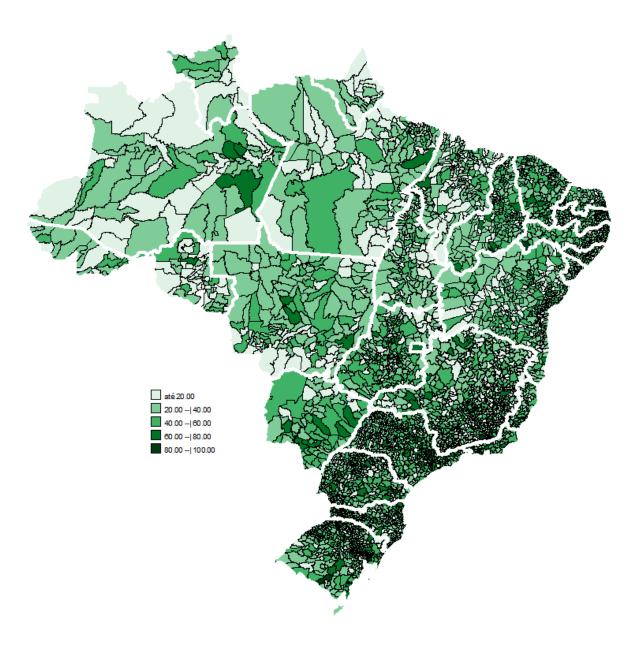
<sup>&</sup>lt;sup>4</sup> An example in this case was a question about whether town halls had accessible elevators: though apparently relevant, it did not include information on whether any given municipality's town hall had more than one story.

 Table 2 - Average IPA-PwD by Brazilian geographic region and State or Federal

NE	35,51	SE	37,72	N	27,56	S	36,12	СО	48,07
AL	33,40	ES	35,38	AC	30,30	PR	35,25	DF	80,00
BA	33,48	MG	31,84	AP	20,83	RS	36,16	GO	36,26
CE	41,27	RJ	45,65	AM	28,92	SC	36,95	МТ	31,73
MA	27,13	SP	37,98	РА	28,06			MS	44,30
PB	38,30			RO	27,18				
PE	38,05			RR	28,44				
PI	37,86			то	29,21				
RN	37,76								
SE	32,36								

**Table 2**, above, presents the average index registered by municipalities in each Brazilian state and geographic region (NE=Northeast, SE=Southeast, N=North, S=South, CO=Center-West). In it, we see Brazil's pervasive regional inequality reproduced, with Northern and (27.56%) and Northeastern Brazil (35.51%) registering the lowest averages and the Southeast (37.72%), South (36.12%) and Center-West (48.07%) regions, the largest. The state with the lowest score is Amapá (20.83%), in the Amazon, followed by Maranhão (27.13%) and Rondônia (27.18%). The only Northeastern state with a score above 40% is Ceará (41.27%) – which has the nation's fourth average index. The highest is the Federal District, which accumulates the responsibilities of a state and a municipality, followed by Rio de Janeiro (45.65%) and Mato Grosso do Sul (44.30%). **Graph 1**, below, allows the visualization of the IPA-PwD score of each one of Brazil's 5,570 municipalities.

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Graph 1 – A Map of Municipal Scored in the IPA-PwD (%):

Linear Regressions – What Determines the Index

But do municipal rights councils influence the existence of municipal policies for people with disabilities? With the IPA-PwD as a standard, it is possible to evaluate empirically whether the existence and the activity level of these institutions increase or decrease the probability of a given municipality having social policies for this segment. With this objective, we designed six linear regression models with data from the 2010 Census, the 2013 MUNIC Survey, the 2014 MUNIC and with data on the municipal *per capita* Gross Internal Product (GIP) for 2014. These regressions are based on the equation

$$\Delta y = \beta_0 + \beta_1 x_1 + \cdots \beta_k x_k + \mu$$

#### Where:

 $\Delta y$  is the dependent variable, in this case the percentile score for the IPA-PwD;

 $\beta_0$  is the constant; and

 $x_1 + \cdots \beta_k x_k$  are the following independent variables:

- A dummy of Brazil's geographic regions, having the Northeast as a base;
- A dummy for the existence of a MCRPD (variable A474 of MUNIC 2014), expressed as 0 in cases where no council exists and 1 in cases where there is a council;
- A natural logarithm for the estimated municipal population in 2014;
- A natural logarithm for the municipal GIP per capita in 2014;
- The number of meetings held by the MCRPD, conceived as a proxy for each council's degree of activity, as suggested by BARRETO (2011), being that municipalities without councils or which did not respond had a value of zero imputed in this variable.
- PcD 1 and 2 The proportion of people with disabilities in the municipal populations, considering as being disabled only those individuals who claimed to be entirely incapable of realizing given actions, even with the

aid of facilitators, of being capable of realizing them only with great difficulty, based on data from the 2010 Census<sup>5</sup>;

- Educ1 The proportion of people in the municipality who have no schooling or did not complete primary education, according to the 2010 Census;
- Educ2 The proportion of people in the municipality who have concluded primary, but not secondary education, according to the 2010 Census;
- Educ3 The proportion of people in the municipality who have concluded secondary, but not higher education, according to the 2010 Census;
- Educ4 The proportion of people in the municipality who have concluded higher education, according to the 2010 Census;
- Social Servants the number of municipal social services workers for every 10,000 residents, as per the 2013 MUNIC;
- ASNivSup2013 the percentage of municipal social services workers with higher education, as per the 2013 MUNIC; and
- ASVinPerm the percentage of tenured municipal social service workers, as per the 2013 MUNIC.

Found below in pages 19 and 20, Table 3 presents the six linear regressions models produced to observe which variables most explain variations in the index, presenting the coefficient of determination, or R<sup>2</sup>, along with the adjusted

<sup>&</sup>lt;sup>5</sup> Since 2010, five new municipalities were created in Brazil. While it is theoretically possible to reaggregate census data in order to reconstitute the demographic information for the territory composing these municipalities, we preferred to designate these five municipalities – Mojuí dos Campos (PA); Pescaria Brava (SC); Balneário Rincão (SC); Pinto Bandeira (RS); e Paraíso das Águas (MS) – were designated as missing for these variables.

do R<sup>2</sup>, at the end of each model. The R<sup>2</sup> expresses the percentage of the sample in a dependent variable (y) which can be explained by independent variables (x). It varies from 0 to 1, being that the closer a model comes to 1.0, the greater its explicative capacity. Because of how it is calculated, the R<sup>2</sup> always increases with the inclusion of new variables, even if these do not produce effects larger than would be expected by chance. The adjusted R<sup>2</sup>, for its part, only increases if new variables improve the model more than would be expected if occurrences were random.

As can be seen from **Table 3**, in pages 19 and 20, the R<sup>2</sup> and the adjusted R<sup>2</sup> do not differ substantially in any of the models.

Models 1 and 2 measure the effect that the existence of a council and the number of meetings it held in 2014 – a proxy of its level of activity, as suggested by BARRETO (2011) – had on the IPA-PwD. Among the simple models, which have a single independent variable, the one with the highest R<sup>2</sup> and adjusted R<sup>2</sup> is Model 2, whose results indicate that each additional annual meeting of a MCRPD will, on average, increase municipalities' indexes by 1.44 percentage points. On its own, this variable explains about 11% of the measured variance. Still, the difference in explicative capacity in relation to Model 1 is small.

Since Models 1 and 2 measure interdependent elements (a number of zero meetings was imputed to municipalities with no council), their variables cannot be used simultaneously. Discarding the *dummy* variable on the existence of a council, Model 6 incorporated the number of meetings it held in 2014, whose coefficients are easier to compare than those of other numeric variables.

Model 3, for its part, had unexpected results. Counter-intuitively, it demonstrated that a greater presence of people with disabilities has a negative impact upon Soares and Galvão, 17

the IPA-PwD: municipalities in which this segment accounts for a larger proportion of the population tended to have lower index measures. This inverse relation, however, has a small coefficient of determination (an R<sup>2</sup> of 0.2%) and the variable is not statistically significant.

Though multivariate, Models 4 and 5 control for groups of similar variables. Model 4 controls for municipal population and *per capita* municipal GIP, which have a substantial impact on the index and explain approximately 16% of its variance. Model 5, for its part, evaluates the explicative power of three variables related to the quality of municipalities' managerial competences. These variables, however, had a little effect upon the variance of the index, with an R<sup>2</sup> of 0.7%.

Summarizing results in one multivariate regression, Model 6 explains approximately 22,3% of the index's average variance. The variable with most explicatory capacity is population, followed by the proportion of the population with a higher degree and the *per capita* GIP. Finally, the number of meetings held by the municipal council in 2014 had a statistically significant, though limited, impact upon the index.

In the light of the fact that the participation in the general population has little explicative power, these results suggest that the level of organization of people with disabilities, their political competence, has a significant, if discrete, effect on the number of policies that a given municipality will implement for this population. This is so even when one controls by structural and contextual factors such as population, schooling and income.

## Table 3 – Linear regressions of the determinants of the IPA-PwD

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Geographic Region (Base: Northeast)						
North						-8,277*** [0,755]
Southeast						-4,292*** [0,648]
South						-1,797** [0,788]
Center-West						-2,065** [0,857]
In estimated municipal population 2014				4,657*** [0,163]		3,751*** [0,234]
In per capita GIP				3,276*** [0,275]		1,326*** [0,420]
Existence of a MCRPD (Base: municipalities without councils)	12,377*** [0,491]					
Quantity of meetings realized by the MCRPD in 2014 (zero imputed when no council)		1,444*** [0,055]				0,618*** [0,061]
Participation of people with disabilities in the population			-0,310*** [0,102]			0,043 [0,098]

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	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Population with no schooling or incomplete primary education (%)						0,491 [0,438]
Population who have concluded primary, but not secondary education (%)						0,640 [0,444]
Population who have concluded secondary, but not higher education (%)						0,494 [0,440]
Population who have concluded higher education (%)						1,514*** [0,455]
Social services workers for every 10,000 residents					-0,047*** [0,010]	0,065*** [0,011]
Social services workers with higher education (%)					-0,033*** [0,011]	0,016 [0,011]
Tenured municipal social services workers (%)					0,026*** [0,007]	-0,009 [0,007]
Constant	32.563*** [0,217]	33,214*** [0,205]	37,277*** [0,778]	-40,392*** ['2,896]	36,130*** [0,615]	-67,964 [44,234]
R <sup>2</sup>	0,103	0,111	0,002	0,159	0,007	0,223
Adjusted R <sup>2</sup>	0,102	0,111	0,001	0,158	0,006	0,220
*** Significant at 1%	- <b>!</b>	•	•	•	•	1
** Significant at 5%						
Standard deviation in brackets						
Sources IBGE - 2013 MUNIC, 2014 MUNIC and 2010 Census						

## Logistic Regressions – What determines the chance of a municipality having a MCRPD

Considering the effects that existence of Municipal Councils for the Rights of Persons with Disabilities had upon the IPA-PwD, we also realized logistic regressions to identify the determinants of a council's existence. Since the existence or not of the council constitutes a binary variable, we used logistic regressions. Using the Maximum Verisimilitude Method, logistic regressions estimate the likelihood ratios of a given phenomenon occurring or not. The specification of the logistic model in is:

$$\Pr(Y = 1 | X1, X2, \dots XK) = \frac{1}{1 + (\frac{1}{e^{(\beta_0 + \beta_1 X1 + \dots + \beta_k Xk})}}$$

Here, the dependent variable (Y) is the chance of a municipality having a MCRPD given the existence of a set of independent explicative variables (X). With the exception of the council's existence and number of meetings held in 2014, these independent variables are the same ones used in the linear regression model and described in pages 15 and 16.

Though logistic regressions do not produce a statistical measure equivalent to the R<sup>2</sup> of linear regressions, various researchers have proposed alternative forms of establishing how thoroughly they explain a dependent variable, known as pseudo-R<sup>2</sup>. **Table 4** presents two such measures: the Cox & Snell pseudo-R<sup>2</sup>, whose upper bound can be significantly less than 1.0, depending on the marginal proportion of cases with events, and the NagelKerke pseudo-R<sup>2</sup>, which adjusts the Cox & Snell to a limit of 1,0. The prevalent interpretation is that the closer a pseudo-R<sup>2</sup> is to 1.0, the closer the model is to explaining variance.

From **Table 4** it can be observed that, among the three first simple logistic regression models, the element with greatest predicative capacity for the existence of a MCRDP is the proportion of the population that has completed higher education. According to Model 1, a one percent point increase in the college-educated population increases the likelihood ratio of a municipality having a council by 1.41.

Among the simple models, Model 2 presents the second highest pseudo-R<sup>2</sup>, demonstrating that a one percent increase in the municipal *per capita* GIP more than doubles the likelihood ratio of it having a MCRDP. Model 3, once again, demonstrates a counter-intuitively negative correlation: the higher the proportion of people with disabilities, the lower the probability of there being a MCRDP.

Multivariate, Model 4 measures the effect of three variables related to managerial competences. Its explicative capacity is greater than that of Model 3, but lower than Models 1 and 2. Only one variable – the percentage of municipal social services workers who were tenured with a permanent contract – has a positive impact on the likelihood ratio of a municipality having a council.

Model 5 includes all analyzed regressors, reaching a substantial increase in the pseudo-R<sup>2</sup>. Despite numerous variables having no statistically significant effects, population is the most significant determinant variable and the model reaches a Nagelkerke pseudo-R<sup>2</sup> of 0,345.

## Table 4 – Logistic Regression of the Probability Ratios of a Municipality Having a MCRDP

	Model 1	Model 2	Model 3	Model 4	Model 5
Geographic Region (Base: Northeast)					
North					1,027 [0,166]
Southeast					0,726** [0,148]
South					0,688** [0,175]
Center-West					0,704* [0,187]
In estimated municipal population 2014					2,483*** [0,050]
In per capita GIP		2,091*** [0,049]			1,037 [0,088]
Participation of people with disabilities in the population			0,902*** [0,017]		1,045* [0,024]
Population with no schooling or incomplete primary education (%)					0,972 [0,107]
Population who have concluded primary, but not secondary education (%)					1,081 [0,108]

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	Model 1	Model 2	Model 3	Model 4	Model 5
Population who have concluded secondary, but not higher education (%)					0,994 [0,108]
Population who have concluded higher education (%)	1,411*** [0,016]				1,146 [0,110]
Social services workers for every 10,000 residents				0,977*** [0,003]	1,010*** [0,002]
Social services workers with higher education (%)				0,988*** [0,002]	0,999 [0,003]
Tenured municipal social services workers (%)				1,008*** [0.001]	1,003* [0,002]
Constant	0,062*** [0.076]	0,00*** [0,481]	0,515*** [0,128]	0,424*** [0,113]	0,00 [10,827]
Cox & Snell pseudo-R <sup>2</sup>	0,098	0,041	0,006	0,031	0,217
Nagelkerke pseudo-R <sup>2</sup>	0,155	0,065	0,010	0,049	0,345
*** Significant at 1%					
** Significant at 5%					
* Significant at 10%					
Standard deviation in brackets					
Sources IBGE - 2013 MUNIC, 2014 MUNIC and 2010 Census					

#### Conclusions

The results obtained suggest that the proportion of the population which has a higher education degree, total population, GIP *per capita* and the level of activity of the MCRPD all have a significant effect upon the IPA-PwD. These are statistically significant and empirically expressive results, especially if one considers that the index is produced based on aggregate data from a declaratory database which describes the atomized and heterogeneous universe of Brazilian municipalities.

The participation of people with disabilities in the population, however, has a negative, if statistically insignificant, influence upon both the IPA-PwD and the likelihood of a municipality having a MCRPD. This suggests that the existence of actions and programs for specific populations is a function not of the size of these populations, but of their organizational capacity and of those invisible, intangible bonds of reciprocal trust which PUTNAM describes as social capital.

Still, most of the variance remains to be explained. The linear regression models account for only 22% of measured variance in the IPA-PwD, while logistical regression models obtained a Nagelkerke pseudo-R<sup>2</sup> of 0,345. Various factors may compose this unexplained component, including cultural characteristics of stakeholders, political ideologies of decision-makers, policy networks, measurement issues and many others.

Regardless, the fact that MCRPDs explain approximately 11% of variance in the IPA-PwD is statistically relevant and belies the null hypothesis. This result suggests room for additional studies to investigate whether similar results can be obtained for other types of policy and rights councils.

## Annex 1: Variables of the MUNIC Survey which compose the Index of Programs and Actions for People with Disabilities (IPA-PwD)

The Index of Programs and Actions for People with Disabilities (IPA-PwD) is a composite index produced from 15 variables from the 2014 Survey of Basic Municipal Information (MUNIC), an annual census of local government realized by the Brazilian Institute of Geography and Statistics. The variables used had two sets of possible answers:

One variable used had the response options 1) totally accessible; 2) partially accessible; 3) not accessible; 4) did not know and 5) did not reply, namely:

A155 – In that which regards the access to public information, the [municipality's] webpage and its electronic services are accessible to people with disabilities?

The other 14 variables used had the response options 1) yes; 2) no; 3) not informed and 4) refusal to answer. They asked:

**A178** – [Does the municipal government maintain policies seeking to] improve the physical conditions of accessibility of schools;

**A179** – Has the office responsible for managing educational policy adopted measures or actions seeking to create multifunctional resource rooms?

**A188** – Has the office responsible for managing educational policy adopted measures or actions seeking to integrate students with disabilities to regular schools?

**A407 –** Does the office responsible for managing human rights policy execute programs or actions for people with disabilities?

**A432** – Does the municipality have specific legislation for the adaption of public spaces to promote accessibility?

**A434 –** Does the municipality have specific legislation guarantying free public transportation for people with disabilities?

**A510** – Does the municipality have a permanent committee to promote accessibility?

**A551 –** Does the municipality have a specific fund for the rights of people with disabilities?

**A615** – [Does the municipality execute policies seeking to] improve the accessibility of public spaces?

**A616** – [Does the municipality execute policies seeking to] improve and guarantee accessibility in public transportation?

**A617** – [Does the municipality execute policies seeking to] distribute orthoses and prosthetics?

**A618 –** [Does the municipality execute policies seeking to] generate labor and income or inclusion [of disabled persons] in the labor market?

**A621 –** [Does the municipality execute policies seeking to] prevent the discrimination of people with disabilities?

**A622 –** [Does the municipality execute policies seeking to] promote the access of people with disabilities to recreation?

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